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***Larvae of the North American Caddisfly Genera (Trichoptera)*, 2nd ed.**

Glenn B. Wiggins

University of Toronto Press, Toronto, 1996

ix + 457 pp., \$110 Canadian

ISBN 0-8020-2723-7

SEVENTEEN YEARS AFTER the appearance of the 1st edition, Glenn Wiggins has again produced a landmark volume on the caddisfly larvae of America north of Mexico. Much progress has been made in the intervening years both in terms of our knowledge of the diagnosis of genera and their different biologies and behaviors and, for predictive biology, in terms of their evolutionary relationships and higher classification. These advances are reflected in the much-revised 2nd edition.

Most conspicuous in the organization of the new edition is the segregation of families into 3 suborders, (Spicipalpia, Annulipalpia, and Integripalpia) with included families treated alphabetically in each suborder. This organization has the advantage of placing biologically related taxa near each other in the text, but makes finding families slightly more difficult for those not familiar with the classification. A further complication is that continuing research is questioning the phylogeny on which Wiggins' classification is based; the monophyly of Spicipalpia especially is in doubt. Although the higher classification system itself may not persist, it does not overshadow the lasting merits of the information provided in this truly outstanding work.

Eight families are added since the 1st edition. Ecnomidae, widespread especially in tropical regions of the world, now have been discovered in the southwestern United States (*Austrotinodes*). The family Rossianidae was created recently for the genera *Goereilla* and *Rossiana*. Uenoidae (*Farula*, *Neophylax*, *Neothremma*, *Oligophlebodes*, and *Sericostriata*) now has been redefined to include North American genera. Five other families now are included that were not in the 1st edition; their genera were known in North America at the time of the 1st edition, but the family names had not gained general acceptance by that time: Apataniidae (*Allomyia*, *Apatania*, *Manophylax*, *Moselyana*, and *Pedomoecus*), Dipseudopsidae (*Phyllocentropus*), Goeridae (*Goera*, *Goeracea*, *Goerita*, and *Lepania*), Hydrobiosidae (*Atopsyche*), and Xiphocentronidae (*Cnodocentron* and *Xiphocentron*). Consequently, there are now 26 North American families recognized in this revised edition.

Similarly, there have been several generic changes. Genera that have been added to this edition include *Austrotinodes* (Ecnomidae), *Beothukus* (Phryganeidae), *Cnodocentron* (Xiphocentronidae), *Paucicalcaria* (Hydroptilidae), *Sericostriata* (Uenoidae), and *Sphagnophylax* (Limnephilidae). Two species of Limnephilidae were transferred into a new genus *Eocosmoecus*. *Ylodes* was elevated to

generic level from subgeneric status in *Triaenodes* (Leptoceridae) and *Metrichia* was elevated from within *Ochrotrichia* (Hydroptilidae). *Macronema* and *Macrostemum* have been redefined, so that all North American species now belong to *Macrostemum*. *Imania* is now recognized as a synonym of *Allomyia* (Apataniidae). *Aphropsyche* has been synonymized with *Homoplectra* in Hydropsychidae and *Oligoplectrum* with *Brachycentrus* in Brachycentridae. As a result, 148 genera are recognized in the new edition. Among these, the larvae remain unknown for the very rare genera *Cnodocentron* (Xiphocentronidae), *Chilostigmodes* and *Leptophylax* (Limnephilidae), and *Oropsyche* (Hydropsychidae).

The excellent introduction and chapters on classification, biological considerations, morphology, and techniques are retained from the first edition and expanded. The signature format of the family chapters also is retained: The introductory section discussing general taxonomic, morphological, and biological features; a key to genera; and alphabetically arranged treatments of the genera with left-page text facing exceptional right-page illustrations. The professionally rendered figures by Anker Odum are reproduced from the 1st edition, with figures for the new genera provided by Clare Storwick and Karl Pogany. Generic discussions each include a section on the distribution and species (with references to descriptions of species whose larvae are known), and sections on morphology, case or retreat, biology, and any needed explanatory remarks. Plates show usually a full habitus drawing of the larva, along with figures of diagnostic morphological characteristics and of the case or retreat.

The 1st edition was selected by *Choice*, a publication of the Association of College and Research Libraries, as one of the outstanding academic books of 1978. In the 1996 version, Wiggins has again held firmly to the high standard he set in the 1st edition for works of this type. North American freshwater biologists and ecologists, college and university students in aquatic biology, and systematists globally will find the volume to be indispensable. Those of us who find pleasure in the amazing diversity of North American Trichoptera and their fascinating range of habits and ecological associations will relish for years the literal and figurative "pictures" Wiggins presents us of these creatures in this volume.

Wiggins' science has been an inspiration for Trichoptera systematists and ecologists throughout his productive career; this volume summarizes and epitomizes that life's work, however, in a manner that will be appreciated by the much wider audience to whom it is addressed.

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